REPORT

OF THE

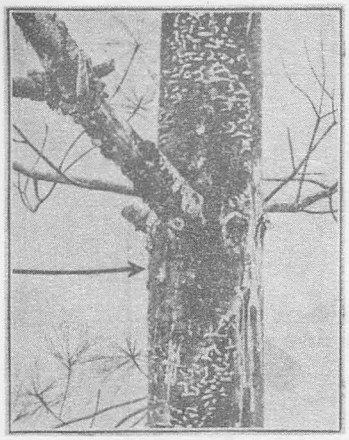
PROCEEDINGS

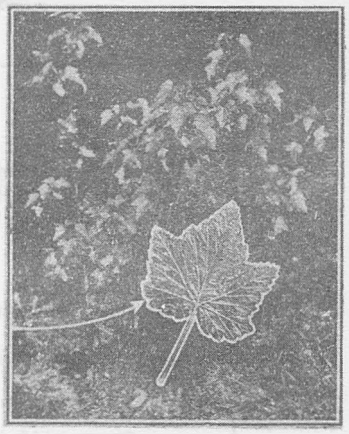
OF THE

SIXTEENTH ANNUAL BLISTER RUST CONFERENCE

HELD IN

Littleton, New Hampshire, October 15-17, 1930.





PROGRAM

ANNUAL BLISTER RUST CONTROL CONFERENCE

Littleton, New Hampshire
October 15th to 17th, 1930.

October 15th

6:30 P.M. - Dinner - Thayer Hotel, Littleton, N. H.

8:00 P.M. - General Meeting - Town Hall, Littleton, N. H. (Public Invited)

Chairman: Judge H. L. Heald, President, Littleton Chamber of Commerce.

Greetings: Hon. Charles W. Tobey, Governor of New Hampshire.

Forestry in New Hampshire: Mr. J. H. Foster, State Forester.

The White Mountain National Forest: Mr. James E. Scott, Supervisor.

A Balanced Tax Program: Mr. G. H. Duncan, Sec'y. Recess Tax Commission.

October 16th

8:00 A.M. - Inspection of demonstration areas showing effectiveness of control and blister rust damage to reproduction and merchantable pines - under direction of Mr. L. E. Newman, State Leader. (Public Invited)

1:00 P.M. - General discussion of blister rust control problems - Community House - Littleton, N. H.

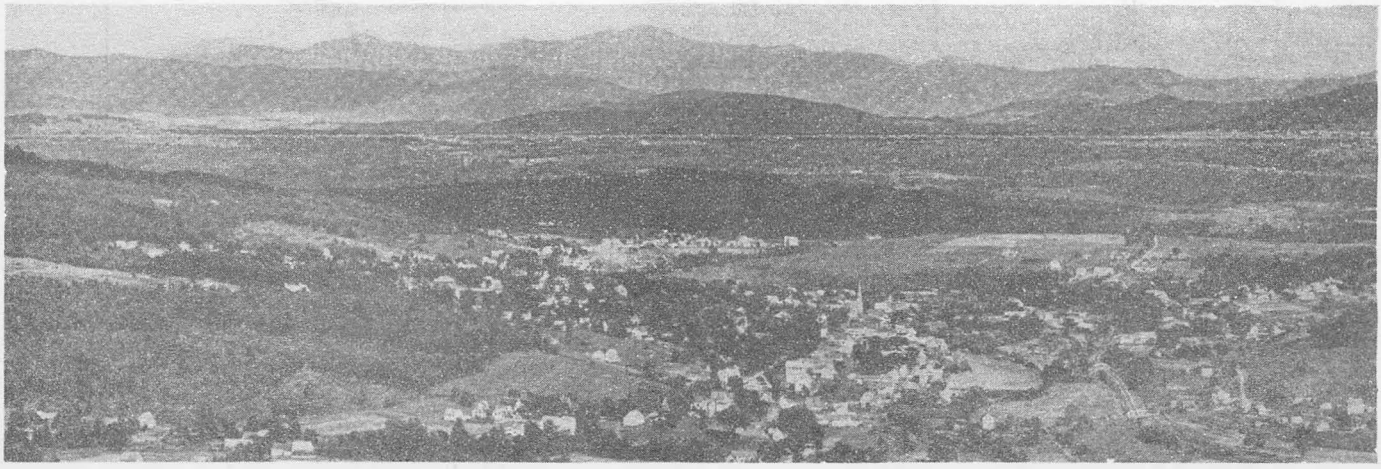
October 17th

8:30 A.M. - Leave Littleton - inspection of field conditions at Mt. Agassiz, Sugar Hill, Profile, and Flume enroute to Holderness, N. H. via Franconia Notch.

Noon: - Dinner - New Plymouth Cafe, Plymouth, N. H.

1:30 P.M. - Inspection of the results of forestry operations at Holderness, N. H. - under direction of Mr. O. M. Pratt, Owner. (Public Invited)

(Important notices and map on reverse side of this sheet)



Panorama of Littleton, N. H. from Mann's Hill.

TRANSPORTATION

Persons not having automobile accomodations should notify, in advance, Mr. E. C. Filler, Office of Blister Rust Control, 408 Atlantic Ave., Boston, Mass., and he will arrange facilities for travel from Boston, Mass. or Concord, N. H. to Littleton, N. H. Automobiles will leave Mr. Filler's office for Littleton at 9:30 AM., October 15th.

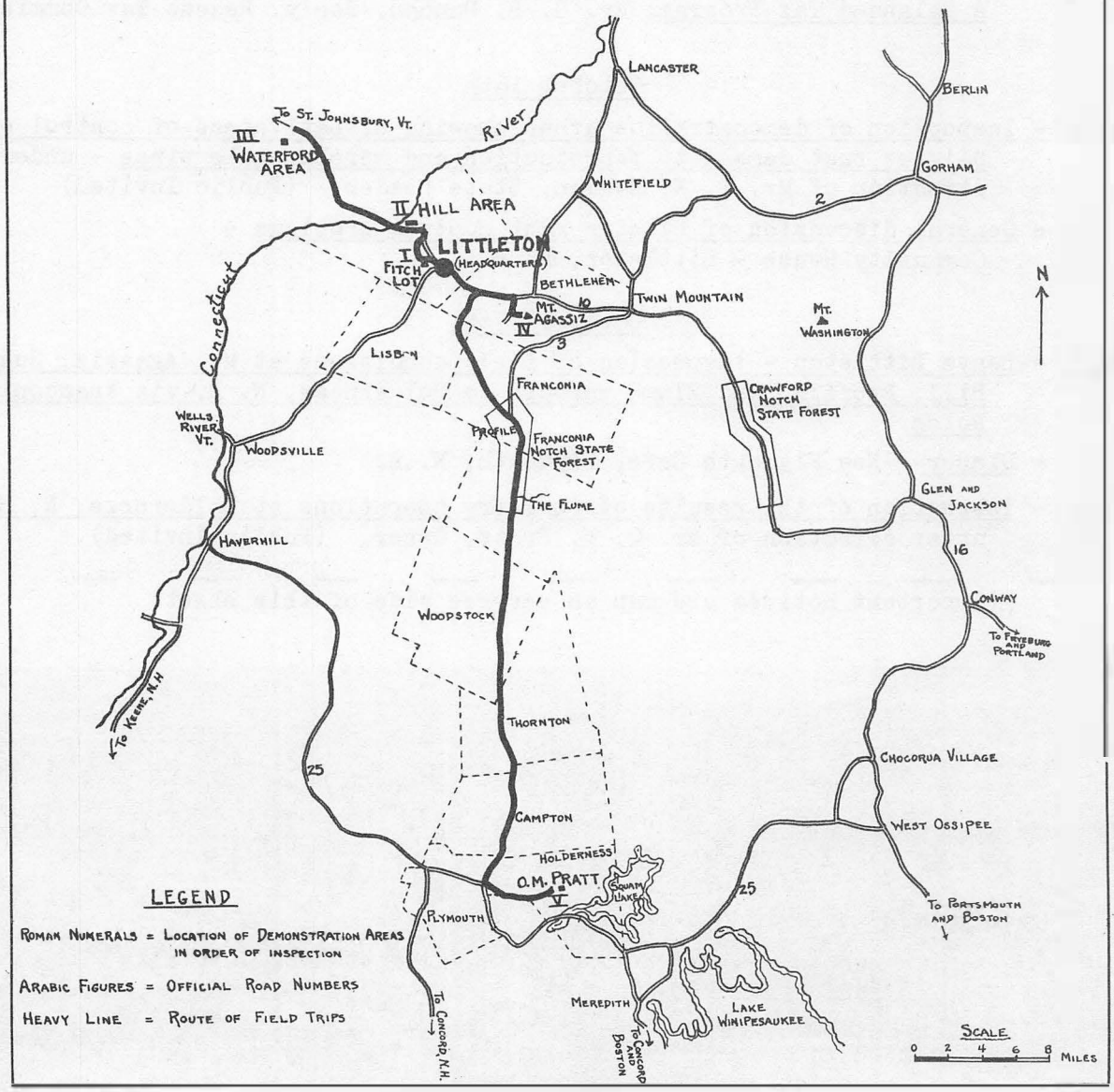
HOTEL ACCOMODATIONS

Headquarters: Hotel Thayer, Littleton, N. H. Special rate for conferees: meals and lodging $4.00 to $4.50 per day per person. To avoid misunderstandings, kindly make your own reservations at any early date.

EXHIBITS

Space will be provided in the Community House at Littleton for exhibit material. Please bring or send any maps, charts, graphs, forms, circulars, etc., which you think would be of general interest.

ROAD MAP OF WHITE MOUNTAIN REGION SHOWING GENERAL ROUTE OF FIELD TRIPS - ANNUAL BLISTER RUST CONFERENCE - 1930.



REPORT OF THE PROCEEDINGS
OF THE SIXTEENTH ANNUAL BLISTER RUST CONFERENCE
HELD IN LITTLETON, NEW HAMPSHIRE, October 15-17, 1930.

CONTENTS

October 15

Opening session 8:00 P. M. - Town Hall - Littleton, New Hampshire

Chairman: Judge Harry L. Heald, President, Littleton Chamber of Commerce.

The 1930 Blister Rust Control Conference convened during the evening of October 15 at the Town Hall, Littleton, New Hampshire, with an attendance of 175 persons. In addition to the permanent blister rust personnel, the meeting was attended by several foresters, pathologists, entomologists and by about 75 local residents. In a most friendly sort of way, Judge Harry L. Heald welcomed the conferees to Littleton. He particularly pointed out the commercial and scenic importance of forests and the fact that his town had been cooperating in blister rust control for a number of years and expected to continue as long as such work was necessary. Judge Heald then read the greetings of Governor Tobey who was unable to be present.

After these introductory statements, Judge Heald introduced Mr. James E. Scott of Laconia, New Hampshire, Supervisor of the White Mountain National Forest. Mr. Scott's remarks and those of the following speakers are summarized below by quotations taken from articles which appeared in the Manchester Union and the Littleton Courier.

The White Mt. National Forest - Mr. James E. Scott, Supervisor

"Mr. Scott gave a comprehensive review of what had been accomplished in the North Country by the Government. He said that over a half million acres of forest lands in the Granite State are owned by the Government and this amount may be doubled within the next ten years. The cost has been four and a half million dollars. He described how the 500,000 acres were acquired, how they are being handled with an eye to the recreational value of them to the state, and how modern management is planned to get a constant annual harvest from them without running out the stand. The average yearly cut is 60 million feet sold to the highest bidder, netting the Government something like $100,000. Mr. Scott explained the definite and adequate method of controlling forest fires. Owing to the scenic value of the reservations in this section, a forest fire would be a national calamity. The speaker stated the Government had been very fortunate in this respect this year with only six fires, burning less than 20 acres. The Forest Service maintains trails to the mountain tops, lookouts, 50 miles of road, and telephone lines to the lookout stations. He also referred to a survey that has been started to determine the quantity and age of the timber; these facts to be the basis of the harvest plans."

Forestry in New Hampshire - Mr. J. H. Foster, State Forester

"John H. Foster, state forester, back from the Pacific Coast conference of United States foresters, told 100 forestry leaders from 12 states and Canada and a large audience of New Hampshire woodlot owners gathered here tonight, that confiscatory taxation of New Hampshire timber, accompanied by forced cutting and slashing of immature lots, is more responsible for chaotic market conditions here, than is the shipment of virgin Douglas fir from Washington and Oregon.

Mr. Foster pointed to the fact that New Hampshire has plenty of land on which good timber may be grown, and the best markets in the world for its sale, yet Washington and Oregon are able to ship to New England and take away that market despite a $16 to $18 per thousand cost differential. The answer is, he said, that New Hampshire hasn't the mature trees to cut, due solely to slaughter-cutting the past decade, and that cutting due practically all to a tax system that makes it impossible for the owner to hold an area until mature growth.

Mr. Foster was deeply impressed by the gigantic lumbering operations of the Pacific Coast and the mass of timber available. For two hours he flew by plane over the wooded areas of Washington and Oregon and many hours more were given to visits to the mills and railroad and shipping centers.

They are cutting virgin timber, he said, with trees five and six feet in diameter and 200 to 250 feet tall. All the work is done by electricity, he explained, and with mills located at tidewater, vessels are loaded right out of the yard in one swing of a giant crane.

His conclusion is that Pacific Coast lumber will continue to hold eastern markets against local competition, until the time when woodlot owners here are able to make forestry a business and grow their trees to 75 to 100 years of age. One point stands out as favorable in the meantime, he said. It is that when western operators are forced to leave the waterfront and go back into the interior and mountain country for their stuff, and when their present holdings run out and they have to buy their supply from the Government forests, their costs will be higher and a proportionate advantage will go to the eastern forest owner."

A Balanced Tax Program - Mr. G. H. Duncan, Secretary, Recess Tax Commission

"Mr. George H. Duncan declared the present method of forest taxation in New Hampshire to be confiscatory and bound to deforest the state. Rigid economy in government offers no solution, he declared. The state constitution, he said, makes it necessary to tax timber at its full value, which has created a situation whereby taxes on timber over 35 years old, takes all the growth value of the wood that year plus a percentage of the investment. The recess tax program, he maintained, offers the way out by exempting timber from taxation until a harvest is made and reimbursing the towns thus affected, through funds raised from a utilities franchise tax and an income tax.

New Hampshire, on account of a century old interpretation of the 'proportional' clause of its constitution, cannot use either the Wisconsin or Maine type of relief. We can, however, use the California type of entire exemption of growth, and couple it with a severance tax, provided we can find some way of making up the resultant immediate deficit in revenue, which, uncompensated, would spell financial ruin for many of our little towns where standing timber now contributes as much as half or two-thirds of the total tax revenue. It is estimated that in New Hampshire standing timber now pays about one million dollars in taxes, or 5 per cent of the total.

The so-called recess tax program offers a method whereby the relief and transition can be accomplished without adding to the burden of other property now taxed. While franchises of railroads and other utilities have been taxed for years, the franchises of electric and gas utilities, being of recent growth, have not been taxed. It is proposed that such franchises now be taxed, this new revenue being estimated at $350,000 annually. Also, while the income from interest and dividends is now taxed, personal and corporate income is untaxed. A moderate tax on such incomes is estimated to return $700,000.

If these two new taxes could be imposed, the deferred tax on timber could be taken care of. The estimated new revenue almost exactly balances the immediate loss by exemption; and no one has ever suggested any additional revenue - simply a transference of part of the tax burden from property now over-taxed to tax paying utilities now untaxed."

October 16

Morning session: Field trip under direction of L. E. Newman and E. C. Filler

The primary object of this field trip in the vicinity of Littleton, New Hampshire, and St. Johnsbury, Vermont, was to demonstrate the extensiveness and severity of blister rust damage to small and merchantable sized white pines. The disease appears to have been introduced into this region on white pines imported from England about 1900 and planted at Lyndonville, Vermont. Since then, the rust has become established generally on the native white pines of this locality. In the winter of 1919, an examination of the pines on sixty-five miles of rod-wide strips run through this territory revealed ten per cent of the trees were diseased. On unprotected areas, the amount of infection has greatly increased since that time. Even on protected tracts, considerable blister rust damage is apparent, due primarily to infections which originated before the application of control measures.

An inspection was made of three infection areas (the Fitch lot, the Hill area and the Waterford tract) located near the main highway connecting Littleton, New Hampshire, and St. Johnsbury, Vermont. The infected trees in these three areas, and along the highway, were tagged. Not all of the diseased pines along the tour were so marked, but enough to give a representative picture of conditions. The status of infection on each tagged tree was denoted as follows:

Tree killed by the disease (Yellow tag - Blister Rust Killed This White Pine)
Tree infected with stem canker (Yellow tag - Blister Rust Is Killing This White Pine)
Tree infected only with branch cankers (Yellow tag - This White Pine Infected with Blister Rust)
Individual cankers (Red tag - This Is A Blister Rust Canker)

Description of Conditions in Areas Visited During Field Trip

Fitch Lot

This area affords a good example of blister rust damage to young and medium aged pines growing more or less in clumps in an old pasture. The oldest canker in this tract originated on wood of 1910 growth. Thus, the rust has been working here for twenty years, interrupted only by the initial application of protective measures in 1918, the first year any systematic control work was performed in this region. Many skunk currants and large gooseberries were pulled in this tract, particularly along the fence rows and on the rocky outcrops of the side hill. A half acre plot laid out under average conditions showed that 42 per cent of the 405 pines in this unit were infected. Over 67 per cent of

Types of tags available at the Washington Office.

the 171 diseased trees have stem cankers and 44 per cent of the infected pines have been killed by the rust. The amount of infection would doubtless have been much greater, but for the timely eradication of Ribes in 1918. This early control work, although not as efficiently performed as similar work in later years, prevented the severe infection wave of 1919 from causing damage in this area. In fact, only 10 cankers originated in this plot in 1919 and 8 in 1920 compared with 33 in 1918. However, in nearby unprotected areas more infection took place in 1919 than in all previous years combined. After 1920, the amount of new infection in the study plot gradually increased as a result of Ribes regrowth. By 1930, this new infection represented 24 per cent of the total number of diseased trees in the plot. This condition demonstrates the need for timely re-eradication work in order to effectively maintain control. In this northern region, where wild Ribes are abundant and climatic conditions especially favorable for infection, a reexamination of control areas is apparently essential within a period of about five years after the initial Ribes eradication work.

Hill Area

This area was inspected for two reasons; first, to observe a roadside demonstration of blister rust infection on white pines; and second, to see the extensiveness and large amount of infection on trees of merchantable size growing under forest conditions. In order to accomplish the latter object, a tour was made through the tract. Many of the diseased pines along this route were tagged. Similarly heavy infection occurs throughout the block. Adjacent to the roadway in the younger growth (trees about 30 ft. high) a general infection study was made in a two-acre plot, the boundaries of which were designated in the field by white string. Sixty per cent of the 290 pines in this unit were found to be diseased and over forty-five per cent of the infected trees have stem cankers. The oldest canker originated in 1912. The infection in the Hill area was caused by wild Ribes, mostly cynosbati and hirtellum. The entire block, in which this area is located, was initially cleared of Ribes in 1927; the tract south of the main road was likewise worked in 1928. This initial control work should have been performed at a much earlier date, but this was impossible due to lack of adequate cooperative funds.

Waterford Area

This area presents a most striking example of blister rust damage to scattered pines in a pasture type and to merchantable sized trees in a well stocked mixed stand. Infection studies have been in progress in this tract since 1924. Apparently, most of the infection was caused by cultivated black currants. These bushes were planted about 1909 at the upper Lee Farm about 1700 feet northwest of the merchantable stand. The patch was increased by cuttings and numbered about eighty large bushes when destroyed in 1917. Scattered throughout the pasture, especially in the moist sites, were Ribes hirtellum and glandulosum. At the time of their eradication in 1925, these wild Ribes averaged per acre, 10 bushes and 195 feet of live stem.

The skunk currants were restricted to six patches, but contained 55 per cent of the total amount of live stem. No wild Ribes were found in the merchantable stand, but scattered bushes occurred nearby, particularly in the adjacent pasture.

In the pasture type, a study of pine infection was made during 1924 in 21.5 acres. At that time, 38 per cent of the 2,178 pines in this type were infected and over 26 per cent of the trees had stem cankers. The oldest canker occurred on wood of 1908 origin. However, it probably originated in 1909 on two-year-old needles.

A study of blister rust damage was begun during 1925 in a three acre unit of the merchantable stand. This plot contains a mixed growth of pine and spruce about sixty years old. Over three-fourths of the pines range from 50 to 80 feet in height. At the time of the original examination in 1925, 73 per cent of the 368 pines were infected, 60 per cent had stem cankers and 9 per cent had been killed by the rust. A reexamination of these trees in 1930, showed that 66 per cent of the pines had stem cankers and 25 per cent had died from the disease. Considering only the 284 infected pines, 85 per-cent had stem cankers in 1930 and 32 per cent were dead. Pines of all size classes have been fatally attacked, especially the larger trees; however, the smaller infected pines die more quickly. The status of infection on each pine in this plot has been indicated by marking the trees with white paint.

Cross = branch canker only
Single band = infected with stem canker (tree alive)
Single band and cross = branch canker only in 1925 - stem canker in 1930
Double band = pine killed by blister rust since 1925
Triple band = pine dead from blister rust in 1925

In order to determine the effectiveness of the 1925 control work, a pine-infection study was made during 1930 in a half-acre plot (marked by white string) in the pasture type. The unit was laid out in a site between two swamps when Ribes were present in 1925. The plot contains 205 pines, all but 11 of them being under 16 ft. in height. In fact, 110 of the trees are 3 ft. or less in height and 71 of these were grouped in the one-foot class. Forty-two of the 205 pines in the plot became infected with 109 cankers prior to the control work. After 1925, only six other trees, or 2.9 per cent of the total number became diseased. Also, only three pines which were diseased prior to 1925 became reinfected at a later date. This small amount of new infection, totaling only 11 cankers on nine trees, shows that the application of control measures in 1925 has effectively checked the spread of the disease in a situation where Ribes were difficult to eradicate.

On the way back to Littleton after the inspection of the Waterford area, the entire party made a side trip to the recently completed hydro-electric plant of the New England Power Association at East Barnet, Vermont. This immense project, costing over $20,000,000.00, will be the second largest power development east of the Mississippi River. Special permission was obtained for the conferees to inspect the mammoth power house.

Photo No. 3046 - Showing heavily infected area at Waterford, Vermont. Photo taken 1926. Cross denotes branch cankers only; single band - trees infected with stem cankers, still living; double band - pines killed by blister rust.

October 16

Afternoon session - Community House, Littleton, New Hampshire

Chairman: William Clave, Blister-Rust Control Agent, Worcester County, Massachusetts.

While waiting for all the conferees to assemble, Mr. Newman read an interesting news item from that day's issue of the Manchester, New Hampshire Union regarding the opening session of the Blister Rust Control Conference, which was held in the Littleton Town Hall during the previous evening.

Topic: EDUCATION

Mr. Pierce, of the Office of Blister-Rust Control, briefly described the facilities and various educational material available at the Washington Office and urged the men, especially the new agents, to take full advantage of the assistance which this office can render. In this connection, it was pointed out that if satisfactory mimeographing facilities are not available at the state offices, such material can be prepared for the agents' use at either the Washington or Boston Office.

Sub-Topic: Indoor Meetings

Considerable time was taken to discuss this subject, as many of the agents and leaders present apparently had experienced discouraging results in their efforts to get satisfactory attendance at indoor meetings, and were anxious to get new ideas and learn the methods used in other states, which had been most successful in this respect. To emphasize the significance of this problem, Mr. Filler mentioned the disappointing attendance at the forestry meeting held the previous evening and the wide publicity and special efforts which had been made to attract local people. In this connection, Mr. Newman believed the biggest problem was in getting the skeptical people to attend such meetings. Mr. Richardson has found that the same people attend the majority of his meetings and he isn't successful in getting out the individuals he desires to reach. Mr. Kane also mentioned that he has experienced the same difficulties and that for similar reasons the County Agricultural Agent in his district was now holding very few indoor meetings. Better results were being obtained by making contacts with groups of farmers at the milk stations. Mr. Pierce advised that the Extension Service were now specializing on circular letters. The consensus of opinion regarding meetings was that they were more successful if arranged and held in conjunction with some other organization, and that lantern slides were more effective than motion pictures.

Sub-Topic: Methods of Obtaining Individual Cooperation

Mr. McIntyre, state leader in New York, asked the conference for suggestions as to how to interest pine owners who have been reluctant to

cooperate in blister-rust control. Mr. Pierce suggested it might be possible to reach such persons through banks as has been done by the Federal Land Bank at Springfield, Mass. Unsuccessful attempts have already been made in this direction, according to Mr. McIntyre. Mr. Filler told of attending a meeting some years ago when a statement was made that it would be impossible to get the cooperation of pine owners in that state. Since that time, over ten thousand individuals have cooperated in blister-rust control in this particular state. At Mr. Filler's request for information regarding the methods used in obtaining cooperative results in Maine, Mr. Frost explained that it had been necessary to "keep plugging" year after year. More meetings were held, more exhibits placed, more interviews made, etc. He also thought that a letter, signed by the Forest Commissioner and sent to a few of the most influential men in the various towns where blister-rust control work was planned, helped materially in securing cooperation. Mr. Roop, of Massachusetts, who has been very successful in securing individual cooperation, sends a different man to make each successive follow-up call until the owner is converted. His own personal interview is reserved to the last. According to Mr. Roop, this method has never failed to get the desired results. Another Massachusetts agent, Mr. Brockway, secures the assistance of some of his cooperators to help convince the "Doubting Thomases". To illustrate the problem they are confronted with in New York, Mr. McIntyre briefly told of one of his temporary agents who was very successful in obtaining cooperation during 1929, but in 1930 was able to secure enough work for only one crew in one town. Mr. Harpp, also of New York, brought out the point that the present value of white pine was probably the greatest factor in unsuccessful attempts to get cooperation in blister rust control. It was pointed out by Mr. Fivaz that the difficulty in securing cooperation in some towns may be due to not obtaining the cooperation of the most influential people first. Several of the conferees concurred with Mr. Perry's suggestion that it might be advisable to refrain from doing any educational work for a while in those towns which have been delinquent in cooperating.

Sub-Topic: Circular Letters

This method of educational work has become increasingly popular during the past few years and at present is being used extensively by many agencies. As previously mentioned, the Extension Service of the United States Department of Agriculture is now stressing this feature, as it is one of the cheapest and most effective means of education. At this time, Mr. Pierce mentioned the two excellent publications - "Effective Circular Letters - How to Prepare Them" and "Circular Letters That Bring Results", which had been distributed to the blister rust agents. Several of the New Hampshire blister rust control agents reported gratifying results from such letters. In five of the seven towns where a special series of four circular letters was mailed to a number of the most influential citizens by Agent King, appropriations were made for control work at the 1930 town meetings. According to Agent Richardson, after other methods had failed, a special circular letter resulted in an appropriation for control work by a backward town in his district. Special circular letters, signed by the Forest Commissioner, have been

sent to about a dozen prominent people in each of approximately 100 Maine towns in recent years; cooperation being secured in about 60 towns annually. On the other hand, Agent Kane of New Hampshire reported that he has never had much success with this method of education. It was generally agreed that the contents of circular letters was the important factor in their effectiveness. They should contain facts of local interest, something new, and above all be short and snappy. Although not directly related to the subject being discussed at the time, Mr. Root of Connecticut gave a very frank expression of his views regarding the reaction of the public towards blister-rust control work. His experience during the past season convinced him that the confidence and support of the public could only be gained by real, conscientious, hard work in the field with the pine owners.

Sub-Topic: Exhibits

Mr. Frost was called upon to briefly describe the unique out-door fair exhibits which he and his agents prepared this year. Numerous pines, of all sizes up to 35 feet in height and showing all stages of blister rust infection, were planted under as near natural conditions as possible. This was accomplished by using plenty of pine duff, a few old stumps, etc. In addition, several Ribes were also planted amongst the pines in order to show the relation of the host plants. The exhibit was plainly marked with one large sign and a few small posters, including the New York State Conservation poster offering $1,000.00 reward to anyone who could prove blister rust was not spread by currant and gooseberry bushes. The large infected pines were most effective in attracting attention.

An expert in the preparation of exhibit material, Mr. Stevens of the New York Conservation Department, briefly told of his work in that state. Their biggest problem is getting out something new. During the past year, they have developed four new sketches for forestry exhibits, which proved very effective. Mr. Stevens recommended that exhibit labels be made short and simple.

Gratifying results have been secured through the use of road-side exhibits in Massachusetts during the past few years. Agent Doore, who has assisted in the preparation of many of these demonstrations, told of exhibits he placed in conspicuous locations on several of the main highways, including the Mohawk Trail, in his district. He estimates that many thousands of people have been informed regarding blister rust in this manner.

In the following discussion of this topic, Mr. McIntyre asked for an expression of opinion as to whether the general tagging of infected pines along roadways might have a detrimental effect on the prospective pine planter. Mr. Kane informed the conferees that a local man had already planted several areas and was planning to make additional plantations of white pine in the vicinity of the demonstration area visited this morning on the Littleton - St. Johnsbury road. Mr. Newman also told of a local

pine owner stopping at the above mentioned demonstration area seeking information on the cutting out of infected branches which had been recently tagged on his property. Mr. Gackenbach informed the conferees that there was a big demand for white pine planting stock in Pennsylvania in spite of the blister-rust problem. On the other hand, according to Mr. Hurford, several Rhode Island land owners have hesitated in planting white pine after seeing blister-rust demonstration areas in other states. To overcome this tendency, Mr. Ferrari, of Michigan, recommended that our demonstration areas also show the value of white pine and the feasibility of blister-rust control in addition to the damage feature.

Sub-Topic: Publications

It was announced at this time that a revision of Miscellaneous Publication No. 22 was being prepared by Doctor Martin and a supply would be available in the near future.

Topic: RIBES ERADICATION

The blister rust control accomplishments in the Eastern States during 1930 were described by Mr. Filler, who used an enlarged tabulation to supplement his remarks. The status of control was also indicated by means of a special map of the Northeastern States. The summaries are given below:

Summary of 1930 Control Work in the Eastern States

		New England and New York	Pennsylvania and Lake States	Federal Control Projects	Grand Total	Per cent of 1930 over 1929
No. cooperating towns		186	1	0	187	+ 17.7
No. individual cooperators		2572	80	0	2652	- 39.6
Acreage of initial eradication		649,662	19,942	2762	672,366	- 15.5
Acreage or re-eradication		72,899	1,224	0	74,123	- 43.6
Total acreage worked		722,561	21,166	2762	746,489	- 19.8
Wild Ribes pulled		7,452,394	1,281,394	239,941	8,973,729	+ 14.2
Cult. Ribes pulled		30,924	1,316	0	32,240	- 57.4
Cost	Individuals	35,329.72	2558.75	0	37,888.47	- 25.1
	Towns	46,128.12	37.60	0	46,165.72	+ 11.2
	States	66,997.34	12,703.31	0	79,700.65	- 4.9
	Government	3,605.42	1,099.91	4667.42	9,372.75	+ 85.3
	TOTAL	152,060.60	16,399.57	4667.42	173,127.59	- 4.3
Cost per acre		.210	.775	1.69	.232	+ 18.9
Ribes per acre		10.3	60.5	86.9	11.97	+ 41.5

The summary of the 1930 control work does not include special black currant projects in Massachusetts, Rhode Island, Connecticut, New York, and Michigan. In connection with this work, 39,394 cultivated bushes were destroyed. All the control work in Rhode Island during 1930 was confined to locating and eradicating Ribes nigrum. In Michigan, 17,778 black currants were located and destroyed at a cost of $11,476.97. The federal expenditures, on cooperative work as listed above, are for Ribes scouting. Cooperative control work with towns was carried on in four New England States, but principally in New Hampshire and Maine. All states, except Rhode Island, had individual cooperation in Ribes eradication work. New York led in the amount of money expended by individuals - $15,109.59, but Maine had the greatest number of such cooperators. The decrease in acreage eradicated of Ribes in 1930 can be attributed primarily to three causes; namely, clearing up of odd jobs; more time and effort given to special projects, such as black currant eradication and nursery sanitation; and the general business depression. In Massachusetts alone, due to these causes, there was a decrease of 120,000 acres over the previous year. The federal control project listed above was conducted on the Acadia National Park in Maine. In addition, a small amount of Ribes eradication was performed on the Monongahela and Shenandoah National Forests in the southern Appalachian region.

Status of Blister Rust Control in Eastern States - December 31, 1930.

New England and New York

State	Total acreage cleared of Ribes 1918 to 1930, inclusive (Excluding re-eradication)	Total acreage still needing initial control work (a)	Per cent total control area cleared of Ribes
Maine	2,575,581	399,018 (b)	86.6
N. H.	2,410,338	377,101	86.5
Vt.	170,755	128,908	56.9
Mass.	1,716,915	40,000	97.7
R. I.	272,682	250	99.9
Conn.	231,955	1,000	99.6
N. Y.	549,527	378,922 (c)	59.2
Totals	7,927,753	1,325,199	85.7

(a) This area is based on estimates, made by blister-rust control agents, of the remaining acreage still in need of initial Ribes eradication in the various towns of their districts. It includes both pine areas and protection zones.

(b) Outside the agents' districts in Maine and east of the Penobscot River, there are an additional 411,871 acres of mixed growth with a stocking of 20 per cent or more white pine. Some of this pine may require protection.

(c) Outside the agents' districts in New York, there are an additional 132,301 acres containing principally white pine plantations and mixed natural growth with a stocking of 20 per cent or more white pine. No information is available as to how much of this acreage will need eradication of Ribes.

Pennsylvania and Lake States

State	Year control work performed	Total acreage cleared of Ribes 1918 to 1930 incl. (Excluding re-eradication)	Acreage of White Pine Growth*			
			Pure Pine (80% or more pine)	Mixed Pine (20-79% pine)	Pine restocking in types other than pine	Total
Penn.	1929 - 1930	16,622	91,897	126,101	157,630	375,628
Mich.	1928 - 1930	10,588	28,321	685,789	122,769	836,879
Wisc.	1918 - 1930	30,759	11,127	109,756	Negligible	120,883
Minn.	1918 - 1922 1930	6,169	173,092	266,812	170,524	610,428
Total	1918 - 1930	64,138	304,437	1,188,458	450,923	1,943,818

*The acreage of white-pine growth is based on a rough preliminary survey made in these states by the Office of Blister-Rust Control during 1927 and 1928. In addition to the acreage listed, there is a vast area of mixed growth with pine stocking of less than 20 per cent.

Sub-Topic: Maps and Records

The importance of adequate maps and records of the eradication work was stressed by Doctor Martin, of the Washington Office of Blister-Rust Control. He especially emphasized the point that the re-eradication project would be seriously handicapped unless satisfactory maps and records were prepared for the initial control work.

Sub-Topic: Checking

To open the discussion of this subject, Mr. Filler told of his observations in the field this past summer. Generally speaking, there has been a growing tendency by the agents and leaders to slight this important phase of the supervisory work. In some instances, this condition has resulted in decreased efficiency in the Ribes eradication. Mr. Filler forcibly pointed out the need for more checking by the agents and leaders in order that the desired results may be assured. He also emphasized the need for more care in the selection of control areas. This is of prime importance and sound judgment is essential in the selection of areas to be cleared of Ribes. Doctor Martin also confirmed Mr. Filler's views concerning the need for more checking. However, he was impressed by the increased amount of checking done in New York this year and requested Mr. McIntyre to briefly describe such activities. Up to 1930, most of the checking in New York had been performed by the agents. However, this year two state checkers were employed to assist the agents in such work. As a result of their united efforts, 960 of the 1,179 cooperative projects were inspected after the completion of the control work. Mr. McIntyre was of the opinion that the fact that such checks were to be made had a beneficial effect on the eradication crews. A new plan, of penalizing the foreman in charge when unsatisfactory eradication work was found, was tried out in New York during 1930 with very gratifying results. Messrs. Rose, of Vermont, and Perry, of Massachusetts, expressed their belief that checking is a major part of an agent's job; as he is familiar with the control areas and as it requires too much time to familiarize a checker with local conditions. Speaking for New Hampshire, Mr. Newman did not believe it was possible for his two checkers and seven agents to efficiently check the work of approximately 190 men employed on Ribes eradication work during the summer months. In this connection, Mr. Filler mentioned that general checking, requiring comparatively little time, will disclose the quality of work performed. He also recommended that the various states adopt this plan and get away from the detailed check system which is costly and frequently does not give a true picture of conditions.

Sub-Topic: Re-Eradication

In a few well-chosen words, Mr. Fivaz, of the Office of Blister-Rust Control, informed the conferees that the changing of the forest floor was the most important factor in the whole re-eradication problem. He suggested data be taken by the agents on the date and site of all fires and logging operations in their districts and that these locations should be

inspected within five years to determine Ribes conditions. Mr. Fivaz particularly emphasized the fact that we assume the responsibility for protection when the initial eradication is completed and it is our duty to warn owners, within a reasonable time, regarding their re-eradication problems.

Session adjourned at 5:20 P. M.

October 16

Evening Session - Community House, Littleton, New Hampshire

Chairman: William Clave, Agent, Worcester County, Massachusetts

Topic: ERRONEOUS IMPRESSIONS REGARDING EFFECTIVENESS OF CONTROL

Mr. Frost pointed out there was a real need for informing the public that the effectiveness of control in protected units should not be judged by the presence of blister-rust cankers originating prior to the application of control measures. He mentioned that in one Maine town some of the estate owners had questioned the value of control work, because they noticed several dying and dead branches on their ornamental pines after Ribes eradication had been performed. As this control work had only been done during the last two years, any visible pine damage must have resulted from infection originating prior to the pulling of the bushes. Mr. Filler stated that the secretary of the local Chamber of Commerce had also questioned the effectiveness of control in his town. The latter had wondered why the pine damage should be so severe after the town had applied control measures, not realizing that most of the infections had originated before protection work was performed. In order to avoid such misunderstandings, Mr. Filler urged the men to fully explain this point in all their educational and service activities. At the suggestion of Mr. Fivaz, responsibility was assumed by Mr. Newman for inserting such information in any articles concerning the conference which might appear in the local newspapers. Mr. Brockway, of Massachusetts, suggested that such information be disseminated to cooperators at the time the initial control measures are applied. The need for education concerning blister rust and its control was further illustrated by Mr. Richardson, who told of a situation where a land owner mistook the white-pine weevil for blister-rust infection and was also under the impression that cutting off infected branches was a part of the control work.

Topic: RIBES ECOLOGY

Mr. Littlefield, of the New York State Conservation Department, heartily endorsed Mr. Fivaz's statement regarding our responsibility in the re-eradication problem. According to Mr. Littlefield, most of the state work on Ribes ecology in New York consists of observations in certain study plots. These were laid out in several areas directly preceding Ribes eradication in 1924 and 1925 to obtain information as to whether or not the crews were getting enough of the Ribes to effectively control the disease and also to determine the rate of Ribes regrowth in protected areas. Checks made in these plots five years later showed there were about 30% less Ribes than before eradication and 40% less leaf bearing stem; about 88% was new Ribes material (new bushes, or new live stem). Mr. Littlefield's observations show that the crews get most of the larger bushes in the initial

eradication work, and that the smaller bushes gradually become more and more decadent. He also expressed the opinion that the Ribes factor on the ground after crew work was of more importance than the percentage of bushes eradicated. In response to a request for a report on the status of his studies on Ribes ecology, Mr. Fivaz stated that the data secured since 1921 was now being prepared for publication. In the meantime, he thought it might be desirable to utilize the Blister Rust News as a medium for answering some of the agents' questions regarding Ribes. In reply to a question by Mr. Hurford of Rhode Island, Mr. Littlefield reported that he was quite certain Ribes nigrum seeds will survive over winter. Observations in 1930 showed 500 Ribes nigrum seedlings in a plot where 400 bushes were eradicated in 1929. Further observations will be made in this area.

Topic: OTHER TREE DISEASES AND RELATED SUBJECTS

Doctor Spaulding reported that he had not found any new diseases since our last meeting, but that the serious European elm disease had been discovered in this country. This disease develops on the young twigs first and can be identified by the wilting of the leaves and discoloration of the sap-wood. The willow disease has been reported as far north as Waterbury, Vermont and about as far north in New York State. Doctor Spaulding also mentioned that an increasing number of reports were being received of resistant chestnut sprouts, and according to Doctor Collins, the chestnut sprouts are undoubtedly standing up longer. At this time, Mr. Pierce reported that a new pine disease has been found in Michigan, which appears to belong to the genus Dasyscypha. Doctor Hahn is at present making a study of this entire genus. Mr. Fivaz described a hardwood area which he observed this summer on Tongue Mountain in New York where the lower branches of the beech trees were dying. He also mentioned finding fall aecia of the blister rust early in November and in December, 1930.

Mr. Miller, of the Bureau of Biological Survey, was introduced to the conferees and he briefly outlined the work which has been assigned to him in the Northeastern States. The problem he is to study is "The Relation of Birds and Mammals to the White-Pine Weevil and White-Pine Blister-Rust". Mr. Miller earnestly requested the cooperation of the blister rust control personnel in reporting observations and collecting specimens to be sent him at the Northeastern Forest Experiment Station, Amherst, Mass. Damage by porcupines in an area of merchantable pines, located near the blister rust demonstration area on the Littleton - St. Johnsbury highway, was described by Mr. Filler. Many large pines have been killed as a result of these animals stripping the bark from almost the entire trunk of the tree.

Topic: ADMINISTRATIVE MATTERS

Numerous questions were answered by Doctor Martin and Mr. Filler concerning the new Government automobiles and official regulations. In addition, Mr. Filler read a letter from Mr. H. P. Avery concerning various administrative matters.

Topic: 1931 ANNUAL CONFERENCE

In response to Mr. Filler's request for a frank expression of views regarding the annual conferences, the consensus of opinion was that these meetings are very beneficial and worthwhile. Mr. Vandenberg, of Michigan, thought that considerably more could be accomplished if three days were allowed for the program. An invitation was extended by Mr. Frost to hold the next annual conference in Maine. However, he mentioned that Maine was not centrally located and it might not therefore be practicable to hold a meeting in his state. Mr. McIntyre also suggested Franklin County, New York, for the 1931 meeting.

Session adjourned at 10 P. M.

October 17

Field trip under direction of L. E. Newman and E. C. Filler

In spite of threatening skies, the field program was conducted as planned, except that the trip to the top of Mount Agassiz had to be cancelled because the low-lying clouds hid the marvelous view. Probably no other equally accessible mountain in New Hampshire, and perhaps in the Eastern States, offers such a marvelous panorama as Mount Agassiz. Altho but 2,394 feet in elevation, and only 900 feet above the village of Bethlehem, this peak is so situated as regards the surrounding country that it commands an unusually wide and comprehensive view. From Agassiz' summit, it is claimed, 317 mountain peaks, situated in three states and Canada, are visible on a clear day. To the southeast and south one looks over a wide expanse of the White Mountain National Forest. Practically all of the white-pine areas in this Forest have been protected from blister rust. The towns of Bethlehem and Franconia are seen to the east and west respectively; both communities, as well as a large number of its landowners, have cooperated for several years in white-pine blister-rust control.

The conferees left Littleton about 8 A. M. traveling southward through the Franconia Notch in about twenty-five automobiles. The fog, however, did not prevent the men from obtaining an unforgetable impression of the beauty of this scenic wonderland. When the party arrived at the Old Man of the Mountains, it was completely covered with clouds. Mr. Bean, of the Manchester Union, described the scene as follows: "This morning the visitors battled with the weatherman for a glimpse of the Old Man of the Mountains, got it, and marveled at his perfection and height. First, a rain cloud sailed by to allow a peak at his nose, then a couple of wind clouds would separate to let the chin stick out. But finally the blanket lifted for a minute to give a perfect view and the sentiment was that it was a spectacle worth waiting for and never over-described." The conferees remained at the site of the "Old Man" for about an hour, but the weather was so disagreeable an inside session was held in one of the reservation buildings. Mr. Filler utilized the time to call upon several of the men for short talks.

Mr. Bodwell, supervisor of the Franconia Notch reservation, gave a very interesting and instructive description of the events attending the acquisition of this new state forest and outlined various improvements that had been made. The Canadian visitors, Messrs. Tessier and Pomerleau expressed their pleasure at being present and briefly described their Canadian connection with blister rust work. Mr. Mandenberg, in an inimitable manner, described the trip from Michigan to Littleton, which he and five others had made in an Oldsmobile sedan. He especially urged that three days be allowed for future annual conferences in order to give ample time for informal discussions. Brief remarks were then made by several of the new agents including Messrs. Fatzinger, May, Gackenbach, Kroeber, Thompson, Ferrari, Woolschlager and Ritter. Doctor Martin described an exhibit which had been placed by the Department of Agriculture in the lobby of one of the

Washington theaters. The subject matter is changed weekly; and according to Doctor Martin, the exhibit has made a very favorable impression. Mr. Filler mentioned that some of the Boston banks were having similar exhibits of local products, and thought the idea might be applied to blister-rust control.

The conferees then traveled to the Flume, where comfortable busses were waiting to take the men to the bottom of the gorge. An inspection was made of this remarkable ravine and each man was furnished with an attractive booklet describing various points of interest in the reservation. Just prior to visiting Mr. Pratt's place at Holderness, the conferees stopped at Plymouth for dinner.

The O. M. Pratt Forest

"If a man can write a better book, preach a better sermon or make a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door." (Elbert Hubbard)

Located along the valley of Owl Brook, in the eastern extremity of Holderness, New Hampshire, is a tract of forest land embracing some 1,800 acres. To it, for several years, foresters and woodland owners have worn "a beaten path". And all because the owner of Owl Brook Forest has grown better pines, not only than his neighbor, but one might even go so far as to add, of far better quality than the majority of woodland owners.

The proprietor of this forest, Mr. O. M. Pratt, was formerly a lumber manufacturer in Lowell, Massachusetts. He had long entertained certain opinions regarding the management of forest property; consequently, upon acquiring this forest land, he was in a position to try out his accumulation of ideas.

Some twenty years ago, Mr. Pratt inaugurated a program of releasing, thinning and pruning white pines. It must be a source of considerable satisfaction to him to realize that today many of the country's most prominent foresters are recommending this same program.

In order that all attending the Blister-Rust Conference might receive first hand the whole story, Mr. Pratt kindly consented to take charge of the Holderness field trip. A start was made from his sawmill, but prior to the woods trip, Mr. Pratt gave a résumé of his practices and methods, exhibiting the tools employed in pruning and specimens of pruned sections which had been cut into boards. The following is a summary of the places visited in the order of their inspection.

The Sawmill:

Mr. Pratt does not confine his efforts to simply growing trees. He harvests the crop, hauls it to his mill, and sees to it himself that

the quality stock is sawed to best advantage. His hardwoods are turned into apple barrel staves and heads. He produces 2,500 barrels every season and says the market is excellent. Hardwood stumpage valued at one dollar per cord is thus made to bring in a revenue the equivalent of five dollars per cord. The sawmill is operated by a modern water-wheel.

Pines on Knoll:

At one time, this entire knoll supported a mixed growth of hard and soft woods. The present appearance of the "untreated" portion bears out this statement. At the age of 15 to 20 years, the pines on about one-half of the area were released and pruned up 5 or 6 feet. Fifteen years later, the pines were pruned to 16 feet or one log length. A thinning, made on the treated area, produced more lumber than exists today on the untreated half of the knoll. In the winter of 1929-30, a further thinning was conducted on a part of the area.

In connection with pruning costs, Mr. Pratt claims that it can be accomplished for 50 cents per thousand board feet. Thus, pines which in general would produce lumber of only box-board quality, will as a result of pruning saw out clear boards, worth two to three times the value of low grades.

Benton Pasture:

On this lot all hardwoods were cut in 1901-02, as Mr. Pratt desired to transform the existing forest of hardwoods into one of soft-woods. In 1914-15, the softwoods of sufficient maturity were cut, with the intention of making a second cutting in 15 to 20 years. The small pines, intended for the final crop, were pruned one-half of their height, and the larger trees to 16 feet.

Release Cutting West Side of Road Above Mill:

Twenty-two years ago, all hardwoods on this area were cut, and all pines pruned to 16 feet. Two or three years ago, a portion of this lot was thinned by removing two-thirds of the volume (the dominant trees).

On the right-hand side of the woods road all hardwoods were cut twenty-two years ago, but no pruning or thinning was performed. The difference between the two areas, as viewed from the road, is striking.

Logged Area - Rear Pratt Residence:

Near Mr. Pratt's home is an excellent example of what care in logging operations will produce. The timber had been sold just prior to his acquisition of this lot about twenty years ago. At Mr. Pratt's request, the purchaser permitted him to assume charge of the logging operations. All pines under 8 inches D.B.H. were spared. About 350,000

board feet were cut from approximately 80 acres. The remaining pines were pruned to a height of 16 feet in anticipation of a second cutting 15 to 20 years later. Persons who have seen this area are agreed that today Mr. Pratt can cut an amount equal to that first removed, and still leave a crop of younger trees that if handled correctly can be made to produce a continuous yield.

Mr. Pratt has always been an advocate of blister-rust control measures. His town, Holderness, has carried to completion the initial work, and a reexamination of the areas first worked is already under way.

Someone has said, "While foresters have been talking forestry, Mr. Pratt has been practicing it". We believe you will concur with the author of these lines.

While the conferees were still in the woods, Mr. Filler called upon the resolutions committee to make its report. The following resolutions were then read and unanimously approved, after which the meeting was adjourned.

RESOLUTIONS ADOPTED BY THE ANNUAL BLISTER-RUST CONTROL CONFERENCE, LITTLETON, NEW HAMPSHIRE

WHEREAS the members of the Conference are indebted to those who have contributed to the success and enjoyment of the meetings,

BE IT RESOLVED, that the Conference express through its Secretary its particular appreciation:

1. To Judge H. L. Heald for his cooperation and interest in presiding at the opening session.

2. To State Forester J. H. Foster; James E. Scott, Superintendent of the White Mountain National Forest; Mr. G. H. Duncan, Secretary, New Hampshire Recess Tax Commission, for their interesting, timely and instructive talks.

3. To the Littleton Chamber of Commerce for their hospitality in making available the facilities of their organization during our stay in Littleton.

4. To the management of Thayers' Hotel for their courteous and efficient service.

5. To the editor of the Littleton Courier for the helpful publicity given through its columns.

6. To Messrs. Filler, Stimson and State Leader Newman and his associates for their untiring efforts in making the arrangements for the conference and in their carrying the plans out so effectively.

WHEREAS the recent developments in the West have made it imperative that Mr. Detwiler be in that region at this time,

BE IT RESOLVED, that our Secretary convey to him our regrets and disappointment at his enforced absence and to assure him of our loyalty and continued efforts to assist in the protection of the white pine stands of our Eastern forests.

WHEREAS a number of men who have been with us on previous conferences are now detailed on quarantine work or otherwise employed in blister rust control work in other parts of the country,

BE IT RESOLVED, that the Secretary express to them our regrets that they cannot be with us at this conference.

WHEREAS we appreciate that the Annual Blister Rust Conferences are made possible by the continued interest and cooperation of Doctor W. A. Taylor, Chief of the Bureau of Plant Industry,

BE IT RESOLVED, that we express to him our thanks and appreciation and assure him our feelings that such conferences are of great benefit to the personnel. We further assure him of our continuing effort to conduct our work upon the highest plane of public service.

WHEREAS the conference has been given exceptional opportunities to visit the state reservation at Franconia Notch and the Flume,

BE IT RESOLVED, our thanks and appreciation be expressed to Secretary Philip Ayers of the Society for Protection of New Hampshire Forests and to Supervisor Bodwell whose personal interest contributed so much to our visit .

WHEREAS we have visited with great interest the property of Mr. O. M. Pratt, of Holderness, and have been shown by him the results of over thirty years of forestry work,

BE IT RESOLVED, that we extend to him our sincerest thanks for the practical lesson in the management of white pine which he has given us.

Respectfully submitted,

W. P. Filley, Chairman
C. C. Perry
H. G. Strait

As the conferees were returning to their cars they were suddenly called together again in order that they might receive a telegram which had just arrived from Messrs. Detwiler and Posey, who were unable to be present due to press of work in the Western States. The telegramwas as follows:

"Message to conference is to vigorously maintain systematic and intensive rust control and to build better white pine forests on general lines so well illustrated by Mr. Pratt. Canada's failure to apply rust control measures and the open question as to how far we shall succeed in securing extensive control in West indicates white pine values of future will be greatly enhanced. This should be stimulus to control in Eastern and Lake States since strobus is a comparatively resistant species and rust easily and cheaply controlled.

Best wishes to all."

S. B. Detwiler and G. B. Posey

Attendance At 1930 Blister Rust Control Conference

Name	Address
Adams, M. R.	New Haven, Connecticut
Barber, P. E.	Saratoga Springs, New York
Barraclough, K. E.	Durham, New Hampshire
Bodwell, C. P.	Flume Reservation, Franconia, New Hampshire
Boomer, S. H.	North Conway, New Hampshire
Bradbury, H. G.	Belfast, Maine
Brockway, E. M.	North Abington, Massachusetts
Charlton, J. W.	Gloversville, New York
Clave, William	Worcester, Massachusetts
Cullen, J. H.	Manchester, New Hampshire
Cullen, W. J.	Laconia, New Hampshire
Curtis, D. S.	North Bridgton, Maine
Doore, G. S.	Northampton, Massachusetts
Duncan, G. H.	East Jaffrey, New Hampshire
Eliason, E. J.	Albany, New York
Fatzinger, R. P.	Brockway, Pennsylvania
Ferrari, G. D.	Bessemer, Michigan
Filler, E. C.	Boston, Massachusetts
Filley, W. O.	New Haven, Connecticut
Fivaz, A. E.	Washington, D. C.
Foster, J. H.	Concord, New Hampshire
Frost, W. O.	Augusta, Maine
Gackenbach, J. J.	Brockway, Pennsylvania
Gath, John	Torrington, Connecticut
Harpp, N. H.	Warrensburg, New York
Heald, H. L.	Littleton, New Hampshire
Herr, C. S.	Lancaster, New Hampshire
Hirt, R. R.	Syracuse, New York
Hodgkins, L. W.	Taunton, Massachusetts.
Holcomb, H. W.	Peru, New York
Hurford, A. W.	Providence, Rhode Island
Kane, T. L.	Woodsville, New Hampshire
Kimball, G. H.	Auburn, Maine
King, T. J.	Concord, New Hampshire
Kroeber, J. K.	Marquette, Michigan
Littlefield, E. W.	Albany, New York
Mandenberg, E. C.	Lansing, Michigan
Martin, J. F.	Washington, D. C.
May, R. M.	Brockway, Pennsylvania
McIntyre, H. L.	Albany, New York
Miller, J. P.	Amherst, Massachusetts
Mott, P. B.	Trenton, New Jersey
Newman, L. E.	Concord, New Hampshire
Nichols, B. H.	Lewis, New York
Paige, Raymond	Fort Ann, New York

Perry, C. C.	Boston, Massachusetts
Pierce, R. G.	Washington, D. C.
Pomerleau, Rene	Berthierville, Province of Quebec, Canada
Pratt, O. M.	Holderness, New Hampshire
Pratt, W. F.	Saranac Lake, New York
Richardson, Mr.	Secretary, Chamber of Commerce, Littleton, New Hampshire
Richardson, G. F.	Lebanon, New Hampshire
Riley, J. E.	New Haven, Connecticut
Ritter, L. B.	St. Paul, Minnesota
Roop, W. T.	Arlington Hts., Massachusetts
Root, R. M.	New Haven, Connecticut
Rose, F. H.	White River Junction, Vermont
Scott, J. E.	Laconia, New Hampshire
Spaulding, Perley	Amherst, Massachusetts
Stevens, G. E.	Albany, New York
Stimson, K. K.	Boston, Massachusetts
Stone, Mr.	St. Johnsbury, Vermont
Stouffer, D. J.	Lansing, Michigan
Strait, H. G.	Hyde Park, New York
Swain, L. C.	Exeter, New Hampshire
Tessier, G. A.	Quebec, Canada
Thompson, R. I.	Grand Rapids, Michigan
Tillotson, C. R.	Amherst, Massachusetts
White, E. J.	Manchester, New Hampshire
White, J. M.	Waterville, Maine
Woodward, E. G.	Warrensburg, New York
Woolschlager, T. P.	Boonville, New York

In addition to those listed above, about seventy-five local residents of Littleton attended the evening meeting, October 15th. Also, about twenty local persons participated in the field trip during the morning of October 16th.